



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/644,582	08/20/2003	D. Navin Chandra	GEN-001	5207

51414 7590 10/23/2006

GOODWIN PROCTER LLP
PATENT ADMINISTRATOR
EXCHANGE PLACE
BOSTON, MA 02109-2881

EXAMINER

PHAM, KHANH B

ART UNIT PAPER NUMBER

2166

DATE MAILED: 10/23/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/644,582

Applicant(s)

CHANDRA ET AL.

Examiner

Khanh B. Pham

Art Unit

2166

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 05 July 2006.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 26-40 and 92-106 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 26-40 and 92-106 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date <u>7/5 and 7/10/2006</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Response to Amendment

1. The amendment filed July 5, 2006 has been entered. Claims 26-40 have been amended. Claims 92-106 have been added. Claims 26-40 and 92-106 are pending in this Office Action.

Claim Rejections - 35 USC § 101

2. 35 U.S.C. 101 reads as follows:

Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

Claims 26-40 and 92-106 are rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter.

Claims 26-40 are directed to "a system" comprises only software components. The claims lack the necessary physical articles or objects to constitute a machine or a manufacture within the meaning of 35 USC 101. They are clearly not a series of steps or acts to be a process nor are they a combination of chemical compounds to be a composition of matter. As such, they fail to fall within a statutory category. They are, at best, functional descriptive material per se.

Claim Rejections - 35 USC § 112

3. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

4. **Claims 92, 98-100** are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

- Claim 92 recites the limitation "the selected case frames" in lines 1-2. There is insufficient antecedent basis for this limitation in the claim.
- Claims 98-100 depend upon a canceled claim 41.
- Claim 106 recites the limitation "the new data" at line 2. There is insufficient antecedent basis for this limitation in the claim.

Claim Rejections - 35 USC § 102

5. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

6. **Claims 26-39 92-95, 97, 101-106 are rejected** under 35 U.S.C. 102(e) as being anticipated by Kim et al. (US2002/0087275 A1), hereinafter "Kim".

As per claim 26, Kim teaches a computer system for storing life science information comprising:

- “an electronic database for storing a plurality of case frames, each case frame comprising: at least two object identifiers; and a relationship connector, wherein the relationship connector relates two of the at least two object identifiers to each other and is based on a life science ontology” at [0046]-[0047], [0055] and Fig. 1;
- “an inference engine for managing the addition of new data to the database by instantiating a subset of the plurality of case frames to represent the new data and assuring the instantiated case frames conform to the life science ontology, thereby creating new life science assertions in the database” at [0302], [0323] and [0081]-[0087].

As per claim 27, Kim teaches the system of claim 26, wherein “a set of said case frames define a biological function” at [0112].

As per claim 28, Kim teaches the system of claim 27, wherein “the biological function comprises a chemical reaction” at [0124]

As per claim 29, Kim teaches the system of claim 27, wherein “the biological function comprises transport” at [0124].

As per claim 30, Kim teaches the system of claim 27, wherein “the biological function comprises digestion of a biomolecule” at [0124].

As per claim 31, Kim teaches the system of claim 26, wherein “at least one of the at least two object identifiers identifies a biomolecule” at [0070].

As per claim 32, Kim teaches the system of claim 26, wherein “at least one of the at least two object identifiers identifies a biological function” at [0124].

As per claim 33, Kim teaches the system of claim 26, wherein “at least one of the at least two object identifiers identifies a relationship connector” at [0089]-[0091].

As per claim 34, Kim teaches the system of claim 26, wherein “the relationship connector represents an identity relationship” at [0091].

As per claim 35, Kim teaches the system of claim 26, wherein “the relationship connector represents a product relationship” at [0091].

As per claim 36, Kim teaches the system of claim 26, wherein “the relationship connector represents a substrate relationship” at [0103].

As per claim 37, Kim teaches the system of claim 26, wherein “the relationship connector represents a enzymatic relationship” at [0107].

As per claim 38, Kim teaches the system of claim 26 further comprising “a graphical user interface configured to permit a user to query the database based on the relationship connector” at Fig. 7.

As per claim 39, Kim teaches the system of claim 26 further comprising “a data input interface configured to accept user instructions relating to the creation of a new case frame” at Fig. 7.

As per claim 92, Kim teaches the system of claim 26, wherein “the inference engine further modifies the selected case frames such that the selected case frames more accurately represent the new data” at [0081]-[0087] and [0113]-[0120].

As per claim 93, Kim teaches the system of claim 92, wherein “the modifications comprise one or more of the addition of new fields, the addition of new relationships, and the addition of metadata” at [0074]-[0077].

As per claim 94, Kim teaches the system of claim 93, wherein “the metadata comprises one or more of the source of the new data, the data the new data was received, the time the new data was received, and the experimental conditions under which the new data was created” at [0077].

As per claim 95, Kim teaches the system of claim 26, further comprising: “a harmonization and transfer module for interfacing with multiple disparate sources of life science data and receiving the new data” at [0346] and Figs. 6, 13.

As per claim 97, Kim teaches the system of claim 95, wherein “the harmonization and transfer module further translates the received data into a data format compatible with the case frames” at Fig. 13.

As per claim 101, Kim teaches a system for storing life science data comprising:

- “an electronic database for storing a plurality of case frames, each case frame comprising at least two object identifiers; and a relationship connector, wherein

the relationship connector relates two of the at least two object identifiers to each other and is based on a life science ontology” at [0046]-[0047], [0055] and Fig. 1

- “wherein the database comprises case frames representing protein phosphorylation reactions, gene expressions, and transcriptional activations” at [0124].

As per claim 102, Kim teaches the system of claim 101, wherein “the case frame representing protein phosphorylation reactions comprises a reactant, a product, and a catalyst” at [0102]-[0112].

As per claim 103, Kim teaches the system of claim 101, wherein the case frame representing gene expressions comprises a gene and a gene product” at [0124].

As per claim 104, Kim teaches the system of claim 101, wherein “the case frame representing transcriptional activation comprises a gene expression, an activation, and a transcriptional activator” at [0138]-[0145].

As per claim 105, Kim teaches the system of claim 101, further comprising “a harmonization and transfer module for interfacing with multiple disparate sources of life science data and receiving new data for inclusion in the database” at [0346] and Fig. 6.

As per claim 106, Kim teaches the system of claim 105, further comprising “an interference engine for managing the addition of the new data by instantiating a subset of the plurality of case frames to represent the new data and assuring the instantiated

Art Unit: 2166

case frames conform to the life science ontology, thereby creating life science assertions in the database” at [0081]-[0087] and [0113]-[0120].

Claim Rejections - 35 USC § 103

7. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

8. **Claims 40, 96 are rejected** under 35 U.S.C. 103(a) as being unpatentable over **Kim** as applied to claims 26-39 above, and in view of Stanley et al. (US 2002/0198858 A1), hereinafter “**Stanley**”.

As per claim 40, Askenazi teaches the system of claim 26 as discussed above. Kim does not explicitly teach “an access manager configured to restrict access of a user to one or more portions of the electronic database” as claimed. However, Stanley teaches a biological database includes an access manger layer to restrict access of a user to one or more portions of the electronic database at Figs. 15-16. Thus, it would have been obvious to one of ordinary skill in the art at the time of the invention was made to combine Stanley with Kim’s teaching in order to enhance the security of the database and protect sensitive data in the database from unauthorized users.

As per claim 96, Kim teaches the system of claim 95 discussed above. Kim does not explicitly teach “the received data is received in XML format”. However, Stanley teaches a biological database utilizing XML format at [0351]. Thus, it would have been obvious to one of ordinary skill in the art at the time of the invention was made to combine Stanley with Kim’s teaching to employ XML because XML is a well known data format, which often used as a common format for extracting data from plurality of different data sources.

Response to Arguments

9. Applicant’s arguments with respect to claim 27-40 and 92-106 have been considered but are moot in view of the new ground(s) of rejection.

Conclusion

10. Applicant’s amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any

Art Unit: 2166

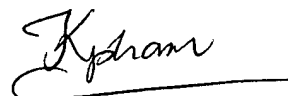
extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Khanh B. Pham whose telephone number is (571) 272-4116. The examiner can normally be reached on Monday through Friday 7:30am to 4:00pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Hosain Alam can be reached on (571) 272-3978. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Khanh B. Pham
Examiner
Art Unit 2166



October 11, 2006